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Strategic Problem Formulation

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THE IMPACT OF SOCIO-POLITICAL INFLUENCES ON STRATEGIC PROBLEM FORMULATION

ABSTRACT

Little is known regarding how strategic problems are first sensed and then subsequently formulated in complex organizations. This paper reports the results of a survey of upper level executives that reveals that commitment, conflict, avoidance, and political activities have a significant influence on the process of gathering information about the nature of a strategic problem.

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INTRODUCTION

This paper presents the latest in a continuing series of inquiries into the processes by which strategic problems are first sensed and the nature subsequently formulated in complex organizations. It presents the results of a survey used to investigate the role of information gathering activities on the formulation of problems as perceived by executives of major corporations. Since socio-political variables in general were found to be important in previous studies (Lyles, 1979, 1981; Lyles and Mitroff, 1980), the purpose of the present paper is to assess more fully the impact of social-political variables on information gathering in the strategic problem formulation process. By strategic problem formulation is meant the process of sensing, gathering information about, and resolving the nature of strategic problems.

Most previous studies of organizational problem solving have focused on procedures for solving a stated problem, i.e., the choosing of a single solution from a set of potential solutions. A number of studies have focused on individual problem solving styles (Newell and Simon, 1972; Taylor, 1975; Morse and Gordon, 1971), on groups, or organizational decision-making (Ash, 1951; Sagasti and Mitroff, 1973; Delbecq and Van de Ven, 1971). However, one particular aspect of problem solving, namely the identification and formation of strategic problems, has been an area almost devoid of research.

Only recently have there been an increasing number of calls for empirical research in the area of problem formulation (Mintzberg, Raisinighani and Theoret, 1976; Newell and Simon, 1976; Lubin, 1977).

It is a fascinating and exciting area of strategic management since it is the issue of agenda setting and its perception by upper management that frequently determines the strategic direction of the organization. The selection, definition, and formulation of what problems should be attacked defines the basic set of threats and opportunities facing the organization. Nonetheless up until now, most research and theoretical efforts have been directed toward the discovery of optimal means for solving an already given or stated problem, not on how to formulate a problem in the first place.

Certainly one reason for this lack of attention to the area of problem formulation is the ambiguous and ill-structured nature of the process of identifying the variables and their interrelationships. For this very reason, it should be emphasized that the present study is a continuation of an exploratory effort aimed at initially defining variables that affect how strategic problems first get sensed and identified by organizations.

The importance of socio-political influences on strategic management processes has been well documented in the literature (Cyert and March, 1963; Lindblom, 1959; Quinn, 1978; and Narayanan and Fahey, 1983). The social structure of the organization becomes an important determinant of how individuals acquire power and credibility, and these become important determinants of an individual's ability to influence strategic direction (Bower, 1970; MacMillan, 1978; Pfeffer and Salancik, 1978). Even the early studies specifically directed at the strategic problem formulation process identify the importance of the socio-political environment (Cyert, Simon, and Trow, 1956; Pounds, 1969; Hayes and

Simon, 1977; Herden and Lyles, 1981; Taylor, 1975). As the strategic problem formulation process evolves, individuals interact and assess how to develop a particular view of a problem as an issue that is acceptable to those in power (Bower, 1970; Mintzberg, et. al, 1976). Thus the specific result of the problem formulation process is determined by the power of individuals/coalitions, the credibility of individuals/coalitions, pressures from the changing social environment, and attempts to avoid the problem entirely (Lyles and Mitroff, 1980).

Despite these efforts, there still remain significant gaps in our understanding of the actual processes used by organizations to diagnose and define important problems. Lyles and Mitroff (1980) provided some new but tentative insights into the processes which influence organizational problem formulation. Their investigation constitutes an exploratory study into determining how organizations become aware of the existence of problems and the major variables that affect problem formulation. The processes represent emergent thematic categories which lend themselves to future empirical investigation. The processes inherent in the themes emphasize the necessity of tying individual behavior to organizational behavior and that merely looking at isolated attributes (e.g., types of problems, inquiry system, etc.) may exclude much of the richness of the political and social aspects of problem formulation. Four emergent themes (Social-Individual, Social-Organizational, Political-Individual, Political-Organizational) were identified from this study as variables that influence the problem formulation process.

An early paper by Lyles (1978) proposed a theoretical model of the problem formulation process, and this model (see Figure 1) was tested

in a later study (Lyles, 1981) in which the problem formulation process of 33 case histories was analyzed and compared to the model. The results suggest that most organizations do not go immediately from sensing a problem to agreement on the nature of the problem. In fact, cycles occur within this procedure, and the time frame for defining a problem may cover several years. Many organizations reach an early definition of the problem that then has to be reassessed.

As an extension of these two studies, this investigation is aimed at operationalizing the emerging themes of the first study and testing their influence on the information gathering activities (see Appendix I) proposed in an earlier model (Lyles, 1978). In particular this study addresses: (1) how do executives respond to the information gathering activities, (2) could the socio-political themes be operationalized, and (3) which socio-political themes were of most influence to the information gathering processes. We might expect some of the following issues to be resolved:

- (1) Are power and credibility particularly important when gathering support for a particular view?
- (2) Will avoidance of the existence of the problem take place while scanning?
- (3) Will pressure from changing conditions become important when gathering information without a preconceived notion of the problem?
- (4) Will power and credibility have little impact on exploration which represents a more rational, scientific approach?

Methodology

A survey instrument was developed and mailed to Fortune 500 companies in six industries.* The questionnaire was sent to upper-level executives in each company who had the title of vice-president or above. Their positions represented diverse functional areas. Of the 460 questionnaires that were sent to current managers, 145 responses were received, indicating a response rate of 32 percent. According to both Goedeke and Tootelian (1976) and Hitt and Ireland (1982), a survey of Fortune 500 companies that has a response rate over 20% is very acceptable. Ninety-one questionnaires had the complete responses necessary for the present study. Many of the unusable responses were in the form of letters in which they explained that it was company policy not to fill out questionnaires or surveys unless they were required to do so by government legislation. The relatively low response rate was anticipated by the authors for several reasons. First, the questionnaire was sent only to upper level executives and knowing the heavy schedules of executives, it was expected that some would choose not to respond. Secondly, the subject matter, namely problem formulation, is an unusual topic and some executives would choose not to fill it out because they would not be familiar with the topic. The authors feel that those executives who did take the time to fill out the questionnaire and to get into the subject area had to be genuinely interested

*The industries included were: Office Equipment, Pharmaceuticals, Electronics, Glass, Food, and Shipbuilding. These particular industries were chosen to represent different environmental effects on problem formulation; however, the results showed no significant differences based on industry type or environmental uncertainty.

and responded to the questionnaire as truthfully as possible. Although the respondents were encouraged to mark any unclear questions or to clarify their responses, few respondents indicated any problems in filling out the questionnaire.

The mail questionnaire required each respondent to think of a recent strategic problem that has had "significant impact on your organization as a whole." Further, "the problem should be one in which you were or are actively involved in identifying the existence of the problem or defining the nature of the problem, as opposed to the solving of the problem." In addition, it was stated that "the problem should not be one that has been defined for the organization," i.e., as those identified by external forces or agencies. The respondents were asked to then give a brief description of the problem or issue (Appendix II).

The heart of the questionnaire asked the individual to respond to Likert-type statements that described the process of problem formulation and that indicated the importance of several influencing factors on the problem formulation process. In each case, the respondents were asked to respond in terms of their specified problems. This paper concentrates on the effect of the influencing factors on that portion of the questionnaire dealing with information gathering items.

Four statements were used to reflect the Rationalization, Exploration, Scanning, and Solicitation processes identified in the Lyles' (1981) model. The respondents were asked to rate these items based with regard "to what extent do you agree the following statements describe the process of problem formulation for this particular problem?" Thirteen indicators were designed to measure the influencing factors

that relate to the emergent theme categories identified by Lyles and Mitroff (1980). A principal component analysis of the 13 influencing indicators revealed four factors with eigenvalues greater than unity. Further, the trend of a plot of the eigenvalues, called the scree test (Cattell, 1966), showed a small slope from the fifth to thirteenth value. Thus, four factors would appear to adequately describe the indicator variables. These factors accounted for 64 percent of the variance in the influencing indicators.

A varimax rotation (Kaiser, 1958) enhanced interpretation, and the resulting factor structure is displayed in Table 1. Factor loadings (indicator-factor correlations) of .4 or higher were considered salient (Gorsuch, 1974), and reflected a well-defined structure. Two of the indicators cross-loaded on two separate factors and showed approximately on equal contribution to both factors. Since these two indicators provided no problems in terms of factorial simplicity, they were retained for use in estimation of factor scores. Scores for the four influencing factors were estimated by regression methods (Harmon, 1976), and were uncorrelated (orthogonal).

Insert Table 1 about here

The present investigation was concerned with the relationship between the set of response or dependent variables, the processes involved in problem formulation, and the explanatory set, the four influencing factors. Since relationships involve sets of dependent and independent variables, multivariate multiple regression was the appropriate analytic technique (Bock, 1975). Further, the problem of multicollinearity

was eliminated since the derived factor scores were uncorrelated. This allowed an unambiguous assessment of the contribution of each influencing factor to the explanation of the variance in the problem formulation processes, as the sum of squared simple correlations equal R^2 in the case of orthogonalized explanatory variables (Bock, 1975, p. 380). Thus, it was possible to assess, in an unconfounded manner, the importance of each influencing factor on the problem formulation process.

Results and Discussion

The multivariate multiple regression analysis begins with a composite test of no association between the influencing factors and the problem formulation processes. The multivariate test of no association yielded a significant generalized F value of 5.56 with 16 and 254 degrees of freedom. Therefore, the hypothesis of no composite association was rejected, and it was assumed that there was a relationship between the influencing factors and the problem formulation processes.

The means, standard deviation, and correlations of the processes and the influencing factors are shown in Table 2. It should be noted that the influencing factors have zero means, unit standard deviations, and are uncorrelated. This uncorrelated condition allows the simple correlations between the processes and the influencing factors to be interpreted as Beta weights (Bock, 1975).

Insert Table 2 about here

The overall result of the multivariate multiple regression analysis is shown in Table 3 in terms of squared simple correlations, multiple

R^2 , the univariate F and its P value under the hypothesis of no association. The univariate tests indicated significant association between the influencing factors and the processes of problem formulation.

Twenty percent of the variance in the Rationalization process was accounted for by the influencing factors (R^2 value). Credibility and Power contributed significantly to the process of Rationalization. It appears that when an individual or group is highly committed to a particular view and conflict occurs within the organization, the individual or group will attempt to disclaim other views and try to strengthen the argument supporting their view. They rely heavily upon how they are perceived within the organization, their commitment, and their ability to influence others, particularly when there is conflict within the organization. Thus, Rationalization, or strong support for a particular view, may also be a process of warding off and resistance to change. Rationalization may be a mechanism of coping adopted by organizations faced with "threatening" strategic problems.

Insert Table 3 about here

The influencing factors accounted for 14 percent of the variance in the Exploration process. The association was a negative relationship for each factor, as shown in Table 2. The set of issues in the Pressure themes within the organization were highly significant ($p < .001$), and Power were very close to traditional significance ($p < .06$). Since empirical data supplied to support a particular view is the highest indicator loading on the Pressure factor (Table 1), it appears that Exploration is positively related to empirical evidence.

Exploration seems to be a process for gathering information in a "rational" organizational climate. In this "rational" organization, political activities and fear would have a detrimental effect. In organizations that were highly political, it is more likely that there would be divergent views about the problem's nature. Since Exploration assumes no a priori model of the problem's nature, it is not a process that is consistent with an organization that has many complex and different political groups. When comparing this to the Rationalization process, it would appear that Rationalization is a more likely process in politically-oriented organizations. Hence, the more there are political pressures or that conflict exists, the less inquiry there is into important factors and variables.

The influencing factors accounted for 28 and 40 percent, of the variance in the processes associated with Diplomacy. It is immediately apparent that these activities are strongly related to the ability of an individual to influence the powerful and the degree to which political activities occur in an organization. In other words, in those organizations that can be characterized as highly political, Diplomacy becomes an important phase of problem formulation. Power and Credibility contributed significantly to the variance of the process of Scanning. This suggests that power resources may act as an impedance in resolving inquiry into a problem's nature. It becomes necessary to test the use of power to support particular views. It is not clear that in an uncertain decision situation, the powerful decision-makers are unbiased. These decision-makers may, in fact, be supporting views that enhance their own positions and interests.

As with Scanning, the Power and Credibility factors contributed significantly to the processes of Solicitation. The Credibility factor accounted for over 25 percent of the variance with regard to Solicitation. Therefore, it appears that it is not enough to have positional responsibility but a manager must be perceived as credible and committed in order to gain support from the powerful. This may correspond to the "belief" or credibility that Pettigrew (1973) suggests is necessary to gathering and maintaining power.

Conclusion

This study has attempted to determine those factors which affect information gathering activities during strategic problem formulation. Clearly many other influencing variables could have been included in the study; however, it was our intention to provide an initial attempt at quantification based on previous studies in the area. The idea that information gathering in problem formulation seems to be related to the political nature of the organization and to the credibility and commitment of individual stakeholders is apparent. Coping with the complex process of defining the nature of ambiguous decision situations can be thought of as managing a highly politicalized negotiation of power and information. This differs little from the fragmented, highly political processes described by Lindbloom (1965) or the process of looking for problems described by Cohen, Marsh and Olsen (1972). It seems clear that the individual or group who has credibility, diplomatic skills, and is committed to a particular view can successfully impact the processes of information gathering during problem formulation. However, since our sample was drawn from individual respondents,

each of whom may have inflated his or her own individual importance, we cannot rule out other organizational influences.

Exploration, which represents more of the traditional view of rational information gathering, has only a slight association with other processes. Information gathering about the problem's nature is perceived by managers as being either a "rational" or a political process. If it is "rational," i.e., no a priori model, it is an attempt to include comprehensive information gathering and reflects a very socially desirable process.

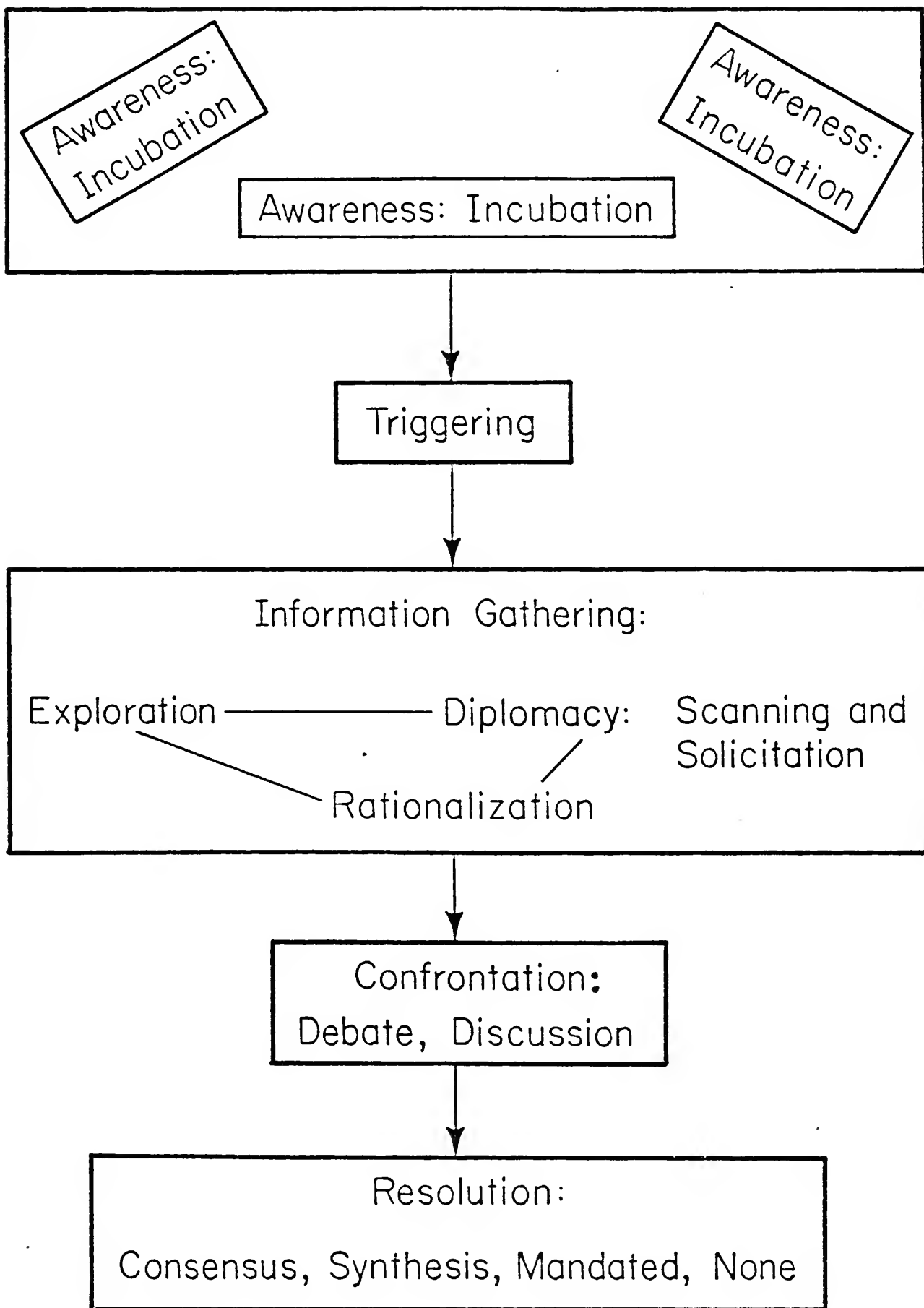
Certainly important to the process of problem formulation are those information gathering activities which involve defining sources of information, types of information to be acquired, and the process of inquiry itself. However, the results of this study suggest that what appears to be most influential within complex organizations is the ability of individuals to influence this process and to attempt to structure the results so that they are consistent with their own values and goals. Their influence on the organization seems to be highly dependent on the individual's ability to acquire power resources and to develop an image or myth enhancing his/her own credibility and commitment.

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INDIVIDUAL
ORGANIZATIONAL



Passages of Problem Formulation

Figure 1

TABLE 1

Factor Structure

Factors

Influencing Indicators	Power	Avoidance	Credibility	Pressure
1. Conflict among individuals or groups.	<u>.85</u>	.16	.09	-.01
2. Emotionalism of an individual or group.	<u>.85</u>	.14	.07	.03
3. Power of an individual or group supporting a particular view.	<u>.76</u>	.13	.25	.11
4. Political activities within the organizations.	<u>.46</u>	.34	.24	<u>.44</u>
5. Avoidance of problems that identify past errors.	-.02	<u>.86</u>	.05	.13
6. Avoidance of problems that may create need for major change in the organization.	.22	<u>.77</u>	.06	.13
7. Fear of identifying the problem.	.28	<u>.72</u>	.91	-.01
8. Credibility of the individual or group supporting a particular view.	.10	-.01	<u>.83</u>	-.20
9. Commitment of an individual or group to a particular view.	.17	-.01	<u>.81</u>	.10
10. Ability of an individual or group to get support of the powerful within the organization.	.35	.21	<u>.48</u>	.20
11. Empirical data supplied to support a particular view of the problem.	.00	.05	.33	<u>-.81</u>
12. Pressure from other problems that were occurring concurrently.	.00	.23	<u>.42</u>	<u>.52</u>
13. Turnover rate among upper level executives.	.17	.33	.28	<u>.42</u>

TABLE 2

Means, Standard Deviations, and Correlations

	Mean	S.D.	Correlations							
			Processes			Influencing Factors				
			1	2	3	4	5	6	7	8
Processes										
1. Rationalization	2.75	1.34	1.00							
2. Exploration	4.35	.75	-.04	1.00						
3. Scanning	3.15	1.42	.39	-.18	1.00					
4. Solicitation	2.84	1.35	.62	-.13	.73	1.00				
Influencing Factors										
5. Power	.0	1.00	.26	-.19	.45	.34	1.00			
6. Avoidance	.0	1.00	.15	-.14	.17	.07	.00	1.00		
7. Credibility	.0	1.00	.33	-.11	.19	.51	.00	.00	1.00	
8. Pressure	.0	1.00	.04	-.28	.11	.12	.00	.00	.00	1.00

TABLE 3
Square Simple Correlations, R^2 , and UNIVARIATE F RATIOS

Influencing Factors	Process			
	Rationalization	Exploration	Scanning	Solicitation
Power	.067*	.035	.203*	.118*
Avoidance	.023	.017	.029	.004
Credibility	.108*	.012	.038*	.261*
Pressure	<u>.002</u>	<u>.077*</u>	<u>.013</u>	<u>.014</u>
R^2	.200	.141	.283	.397
F	5.357	3.527	8.500	14.143
P	.000	.010	.000	.000

*Simple correlation significantly different from zero at .05 level.

APPENDIX I

Information Gathering Activities

Rationalization	The process of gathering information to support a particular view of the problem and to disclaim other views.
Exploration	The process of determining the important factors and variables affecting the nature of the problem without a preconceived notion regarding the problem's nature.
Scanning	The process of determining how the powerful people in the organization were aligned regarding the nature of the problem.
Solicitation	The process of gathering support of the powerful to support a particular view.

APPENDIX II

Examples of Brief Statement of Problems

- Two profit center divisions that produce food products but use separate sales forces which are governed by conflicting philosophies and policies.
- Establishment of a holding company to achieve added growth and improve return on equity vs. our current modus operandi. A different method to increase equity.
- Is it economically sound to invest \$8 million in updating or replacing animal feed manufacturing facilities in the northeast?
- The organizational and goal structure of new product development which is time/cost consuming and is overwhelmed by CYA instead of entrepreneurship (not unique to this company).
- Proposed government regulation of such proportion as to fundamentally change our company.
- Declining sales volume in several key product lines.

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